

Evidence-based medicine(EBM)

Abstract

The goal of Evidence- based medicine (EBM) is finding the most appropriate solution there is to give in the broad field of medicine at that exact state of time and studies in a present case. EBM gives the best possible way of approach and leadership towards a decision by taking all valuable sources into consideration which matter in scientific view. Within EBM, evidence is classified by its strength in aspect of the accuracy, relevance in today's state of research as well as extent and depth of studies and with it along its evaluation. There is contribution of strong and weak evidence. Strong evidence refers to results from meta- analyses, systematic reviews and randomized controlled trials, thus those kinds of results are recommended highly. Weak recommendation on the other side will be yielded by methods that use fewer resources than the highly recommended ones and are consequently lower ranked. Originally EBM was thought of as a method that ascertains different approaches of physician in individual cases. This field nowadays includes the use of evidence in the definition of standards of approximating certain groups and populations^[1].

Main concept of EBM

The main concept of EBM is that it gives healthcare decisions a structured process that help professionals decision and let patients to choose the best available healthcare interventions for the outcomes they are seeking. Because it involves routine use of research evidence, evidence-based medicine was literally impossible before the advent of large electronic databases of research .more over,EBM provides clinicians with practical information and tools for assessing best practice in relation to individual patients that until recently were simply unavailable^[2].

EBM guidelines

EBM Guidelines is an easy-to-use collection of clinical guidelines for primary and ambulatory care linked to the best available evidence. Continuously updated, it also follows the latest developments in clinical medicine and brings evidence into practice.

Evidence-based guidelines, also called clinical practice guidelines, are well organised developed statements to help practitioner and patient decisions about appropriate healthcare for specific clinical issues. Clinical guidelines have become common in the practice of medicine. Most well-conceived clinical guidelines are developed using a specified method that incorporates principles of EBM and consensus recommendations made by a panel of experts. Although clinical guidelines may describe standard practice, clinical guidelines alone do not establish the standard of care for an individual patient.

EBM Guidelines is designed to provide you with the information that you need, using one search term, very fast . Made for use at the point of care, the guidelines are delivered in a format that makes its easy for a clinician to make a decision about a treatment.

Why is EBM Guidelines a vital tool for all primary care physicians?

- Core clinical knowledge: nearly 1,000 concise primary care practice guidelines
- Trusted evidence: Over 3,000 quality graded evidence summaries, supporting the given recommendations
- Find the solution: Powerful software and indexing (including MeSH and UMLS) enabling quick and effective searching
- Watch the experts: An expanding collection of videos (currently over 60), showing clinical examinations and procedures, and ultrasonographic examinations
- See the problem: A searchable library of over 1,000 high-quality photographs and images including extensive collections of dermatological and eye images
- Hear the problem: Audio samples linked to articles, including descriptions of pulmonary diseases and heart murmurs in children
- Cochrane Inside: All Cochrane Systematic Reviews cited within EBM Guidelines are provided in full text

Key calculations: Tools for the calculation of peak expiratory flow rate variation, body mass index and LDL cholesterol, amongst others^[3].

What are scientific databases?

A scientific database is organized from computer engine. Engines, which can be accessed for scientific inquiry, usually will be accessed by certain professional people in their subject.

Computerized scientific databases allow to share new information broadly, updated, low cost and fast, in comprehension to written in books and scientific journals.

Scientific data can divide into two classification:

Deep database – specialize in narrow type of topics, and have broad data about them.

Wide database – Contain many different kinds of data, however have relatively few information for each subject.

It is important to rely on reasonable sourced information, as explained at EBM guidelines ^[4].

Clinical trials and types of clinical trials

Clinical trials are experiments done as clinical research. They are supposed to answer specific questions about the research. Clinical trials check the safety and efficiency of the research. They are conducted only after getting an approval from the health authority or ethics committee of the country it is conducted in. The approval of the research does not mean that the trial are safe but the authority that allowed it takes responsibility for the risks and benefits of the research. Clinical trials are conducted in a few different ways, they all make the research more accurate :

1. Blinded - when the subject does not know any information about the test. The opposite of a blinded clinical trial is an open trial when the participant knows what he is tested about.

2. Double blinded - when both the tester and the subject do not know the information about the clinical research.

3. Randomized - when the participants are randomly chosen to their group. The participants can also be chosen to a placebo group (a group of people who get a drug that doesn't affect the trial, it works as a control group) which gives the

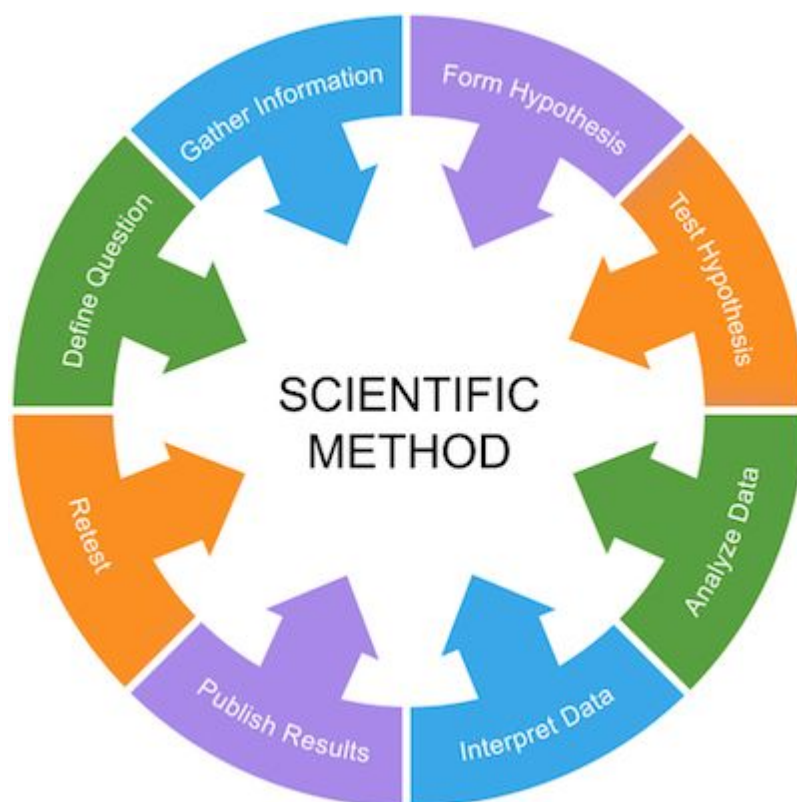
conductors of the test a control group. The random clinical trials is considered to be the gold standard for clinical trials because of the way the research is conducted.

4. Multicenter - when the clinical research is done in a few different places in order to check the efficiency in different areas and on different population. The problem with this research is that it takes a long time to conduct the research.

5. Controlled clinical trial - a clinical trial that has a control group. A control group is a group of people that are used to compare the results. A control group can get a placebo drug, a different drug or no treatment at all. A control group is very important in order to make sure that the results of the clinical trials make a difference^[5].

The Scientific method

When gathering medical evidence, the method of choice is the Scientific Method. It standardizes the gathering of evidence, regardless of the type of evidence, by following a strict set of steps. The goal of this method is to test a given theory (hypothesis).



Types of Evidence

There are several ways to gather evidence in medicine and they all use the scientific method.

Cohort Studies

Any group of people linked in some way is a cohort. In cohort studies researchers follow and observe a group of patients, over time, who are undergoing a certain treatment or have an exposure. Researchers then compare the patients' outcomes to a similar group who have not been exposed. An example of a cohort study would be, following a group of children from their birth, and record various information (exposures) about them.

Systematic Reviews

Systematic reviews answer a specific question in a clinical topic. This is done by reviewing all literature relevant to the question. The literature containing the highest quality of evidence is studied, sorted and summarized. The systematic reviews are generally regarded by evidence-based medicine professionals as one of the highest levels of medical evidence.

Meta-Analysis

A meta-analysis mathematically combines data from several similar experiments or studies to test their statistical significance. The collected data comes from various independent researchers, performing similar studies. All the data is pooled together and analyzed as if it was one big study.

Hierarchy of medical evidence

The hierarchy of evidence is a core principal that attempt to build a firm structure for your question from top to bottom. The evidence hierarchy allows you to take a top-down approach to locating the best evidence where you first started to search. the hierarchy helps conducted systematic review all over the sources and to divide it into the most reliable ones, down to the less reliable one. hierarchies of medicine evidence rank study types based on the strength and precision of their research methods and resources .

- Evidence pyramid: The hierarchy based on the evidence pyramid which is divided into few levels. As we ascend in the pyramid, the fidelity and reliability of the sources will be higher so it make us more confident on the resource.^[6]



Reference:

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